State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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May 5, 2003

CERTIFIED RETURN RECEIPT
7099 3400 0016 8896 2260

Neil Bradshaw
374 South 500 West
P.O. Box 87
Milford, Utah 84751

Re: Second Review of Notice of Intention to Commence Large Mining Operations, Neil Bradshaw et al, Bright Quarry, M/021/030, Iron County, Utah

Dear Mr. Bradshaw:

The Division has completed a review of your draft response, received March 31, 2003, to the Division's initial technical review sent to you on February 28, 2003 for the Bright Quarry, located in Iron County, Utah. After reviewing the information, the Division has the following comments that still need to be addressed before tentative approval may be granted.

The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion. **Please address only those items requested in the attached technical review. We request that you please send replacement pages of the original notice, using redline and strikeout text so we can see what changes have been made. After the notice is determined technically complete and we are prepared to issue final approval, we will ask that you send us two copies of the complete and corrected plan. Upon final approval of the permit, we will return one copy stamped "approved" for your records.** Please provide a response to this review by May 30, 2003.

The Division will suspend further review of the Bright Quarry Notice of Intention until your response to this letter is received. If you have any questions in this regard please contact me, Paul Baker or Doug Jensen of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
Attachment: Review
cc: Ed Ginouves, BLM, Cedar City FO
O:\M021-Iron\M0210030-Bright1&2\Draft\Brightrev2.doc

Utah!
Where ideas connect

SECOND REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS
May 5, 2003

Neil Bradshaw et al
Bright Quarry - M/021/030

R647-4-106 - Operation Plan

106.5 Existing soil types, location, amount

Table 2 of this section of the application contains estimated soil depths based on current soil profiles exposed on site, estimates of the amount of area covered by each individual soil, in-place volume estimates, and information about how much soil has been stockpiled. In general, the thinner soils in the quarry areas have been stockpiled, and most of the thicker soils in the processing areas have been left in place. (PBB)

Attachment 1 contains information from the soil survey of parts of Iron, Washington, and Kane counties. According to information in this survey, there are horizons in the two soil series that occur at the mine site that should not be salvaged and mixed with topsoil. In the Checkett Series, there is an illuvial (argillic) horizon below about six inches. Although the Dixie Series soils are deep, there is an illuvial horizon below about six inches, and the Bk2 horizon, which in the typical pedon begins at 15 inches, that has a very high pH at 9.0. (PBB)

Because of these limiting factors, soil should not be salvaged below a six inch depth, unless site-specific information confirms the argillic and strongly alkaline horizons are deeper. Although the application says there is one to three feet of soil available in many of the areas, **this much soil may not be suitable for salvage**. (PBB)

106.6 Plan for protecting & redepositing soils

According to the application, the top six inches of soil will be salvaged in the north and south processing areas, and the remainder of the soil will be used as cut and fill to create a gently sloping working area. All soil in the quarry areas will be stripped and stockpiled in advance of mining. (PBB)

One of the maps in the application needs to identify the locations of soil stockpiles. This is important, both for protecting the soils and for bonding calculation purposes. (PBB)

Any soil that will not be used almost immediately in reclamation should be stockpiled so the slopes are no more than about 2h:1v and seeded to protect it from erosion. The application needs to contain this commitment. (PBB)

The plan for salvaging six inches of the soil in the *processing areas* and using the rest as cut and fill is acceptable under certain conditions to which the operator should commit. Any contaminants, such as oil products, salt or other chemicals, or anything else that might be harmful to vegetation, wildlife, or livestock, should be properly stored, cleaned up immediately if spilled, and properly disposed of. At the time of reclamation, the subsoils should be ripped at least 18 to 24 inches prior to the placement of topsoil. (PBB)

The operator should clarify how much soil has been salvaged from the existing processing areas. When the Division inspected this site in January, it did not appear much soil had

been salvaged from the processing areas. Is there enough to put six inches of soil over the processing areas? (PBB)

All available soil in the quarry areas will be stripped and stockpiled in advance of mining. Section R647-4-107 (concurrent reclamation) says fines and other reject material will be returned to the quarries and become a foundation for replacement of the growth medium and topsoil. This plan is acceptable, but the surface needs to be left in a roughened condition. The application should describe how this roughness will be achieved. (PBB)

Map 1 shows a topsoil borrow area, and Table 1 indicates three feet of soil is available in this area. Section 111.12, Topsoil Redistribution, says the mined out quarry areas will be covered with salvaged topsoil from the quarry areas, supplemented by the upper portion of the soil profile from the topsoil borrow areas. The Division questions the need for a topsoil borrow area. The quarry areas have little soil over bedrock, but there will be some fines put back in these areas that would serve as subsoil. Between the salvaged topsoil and these fines, there should be enough material to serve as a growth medium that would allow for revegetation success. The operator needs to provide adequate justification for the establishment of the borrow area, or eliminate the borrow area proposal from the plan. If the borrow area is kept as part of the plan, the operator needs to provide more specific information about how much soil will be taken from this area and whether it will be possible to reclaim it. If six inches of soil was taken from the borrow area, it might leave an argillic horizon on the surface that may be difficult to revegetate. (PBB)

106.7 Existing vegetation - species and amount

The application needs to include vegetation information adequate for establishing revegetation success standards. This needs to be site-specific ***absolute*** cover values rather than ***relative*** cover values. The application includes information from the soil survey about characteristic vegetation of the three soil units present in the area, but because it is not site specific and is in the form of relative cover values, it cannot be used to establish success standards. The cover information from the soil survey is useful for developing a seed mix, so it could be left in the application, but a site-specific vegetation survey must be performed of the adjacent, undisturbed areas and the results made part of the application. (PBB)

R647-4-107 - Operation Practices

107.5 Concurrent reclamation

Mined out pit areas will be incrementally backfilled with waste rock and fines that will serve as the foundation for growth media replacement and vegetation. If these areas are not to be used/mined after they are backfilled, they should receive final reclamation treatments, and the operator should make this commitment. (PBB)

R647-4-109 - Impact Assessment

109.4 Slope stability, erosion control, air quality, safety

The application says a letter from the Division of Air Quality has been requested and will be provided. The Division needs assurance that Air Quality's requirements are being met, so the application needs to contain an Approval Order or information indicating an Approval Order is not needed. (PBB)

R647-4-110 - Reclamation Plan

110.1 Current & post mining land use

The plan submitted in December 2002 says the current and postmining land uses are grazing and wildlife habitat. This information is adequate but needs to be carried forward into the current plan. (PBB)

110.5 Revegetation planting program

According to the application, the seedbed will be prepared to a depth of six inches by ripping, discing, or harrowing. The seed will be drilled or broadcast, and if it is broadcast, it will be raked or harrowed to a depth of ¼ to ½ inch into the soil.

The Division suggests the following changes to the revegetation plan. In the quarry areas, the operator has salvaged and plans to salvage available topsoil. If ripping to six inches deep is possible in these areas, this would be a good alternative, but if ripping is not possible because of the topography, the seedbed should be left very rough either as the soil is replaced or by gouging it with a trackhoe or similar equipment. Discing and harrowing are likely to leave a fairly smooth surface that is not conducive to erosion control or revegetation success. (PBB)

After the processing areas are graded, the topsoil could be replaced and the areas ripped at least 18 to 24 inches deep parallel to the contour. This should leave a rough surface that will trap available moisture and decrease erosion. Discing and harrowing of these areas would not be necessary. (PBB)

Drill seeding tends to decrease surface roughness but is an acceptable seeding method on relatively flat surfaces. Steeper areas should be broadcast seeded, and broadcast seeding would also work for flatter areas if done very soon after seedbed preparation. If seed is broadcast shortly after the flatter areas are ripped, no raking or harrowing should be needed. The Division suggests mounting a broadcast seeder on the back of the dozer so seed is applied immediately after ripping. The application should give some criteria for determining which areas will be broadcast seeded and which will be drilled, or it should state that seed will be broadcast in all areas. (PBB)

Some species in the proposed seed mix are not adapted to the site and could be removed. The Division suggests the following changes: remove bitterbrush, smooth brome, and

pubescent wheatgrass and replace them with Wyoming big sage (1/4 pound PLS/acre), Sandberg bluegrass (1/4 pound PLS/acre), and bottlebrush squirreltail (1/2 pound PLS/acre). The seeding rate for Palmer penstemon could be reduced to 1/4 pound PLS/acre. Instead of doubling the seeding rate for broadcast seeding, it would be better to increase it by 50 percent. (PBB)

R647-4-111 - Reclamation Practices

111.5 Land capable of post mining land use

The discussion in the application about the postmining land uses is considered adequate. (PBB)

R647-4-113 – Surety

A final reclamation surety estimate cannot be calculated until the permit application is determined technically complete and adequate for tentative approval. (DJ)